

## Fairwood Forest



**Location:** White Ave & Belair Rd  
Northeast Baltimore

**Size:** Approximately 4 acres

**Points Sampled:** 25

**Fun Species:**

Eastern enchanter's nightshade (*Circaea canadensis*)  
Lowbush blueberry (*Vaccinium angustifolium*)  
Carolina allspice (*Calycanthus floridus*)

**Trees Sampled:** 282

**Tree Species Identified:** 31

**Tree Facts:**

84% Native  
16% Non-Native

**Dominant Tree Species**

Tulip Poplar (*Liriodendron tulipifera*)  
White Oak (*Quercus alba*)

**Vegetation:**

53.5% Vegetation  
1.9% Bare ground  
44.6% Leaf litter

**Groundcover:**

21% Native  
75% Non-native  
4% Unknown

**Groundcover Species Identified:** 49

**Dominant Ground cover Species:** English Ivy (*Hedera helix*)

**Soil profile:** Predominantly clay loam

**Invasive Warning:**

\*75% of ground cover is non-native, this is of concern

**English Ivy (*Hedera helix*)** - Aggressive vine that overtakes trees and ground space. Adds excessive weight and reduces photosynthesis of trees.

**Japanese Honeysuckle (*Lonicera japonica*)** - Highly adaptable and rapid growth leading to outcompete native species leading to biodiversity loss.

**Notes:**

\*Soil samples are being processed and the report will be updated upon completion.

# Canopy

## Defining Terms

**Relative Dominance** - The most prevalent species in an ecological community is considered the most dominant. In this study, relative dominance refers to the most common species detected within all our plots at each site.

**Schumacher Invasion** - Schumacher invasion is a visual metric developed by Baltimore Green Space which scores the invasion of vines in the canopy as defined by the categories below.

Schumacher Vine Invasion Score	Definition of Score
0	No Vines
1	Vines located only on the tree base.
2	Vines established but not yet reaching branches.
3	Vines have just spread to canopy and branches.
4	A significant portion of the tree canopy has been overtaken by vines.
5	Vines have completely overtaken the tree canopy.

\*Native and Invasive status for each plant species was determined using the USDA PLANTS Database.

**Trees Sampled:** 282

**Species Identified:** 31

### Dominant Tree Species:

Tulip Poplar (*Liriodendron tulipifera*)

White Oak (*Quercus alba*)

Norway Maple (*Acer platanoides*)

### Trees

81% Native

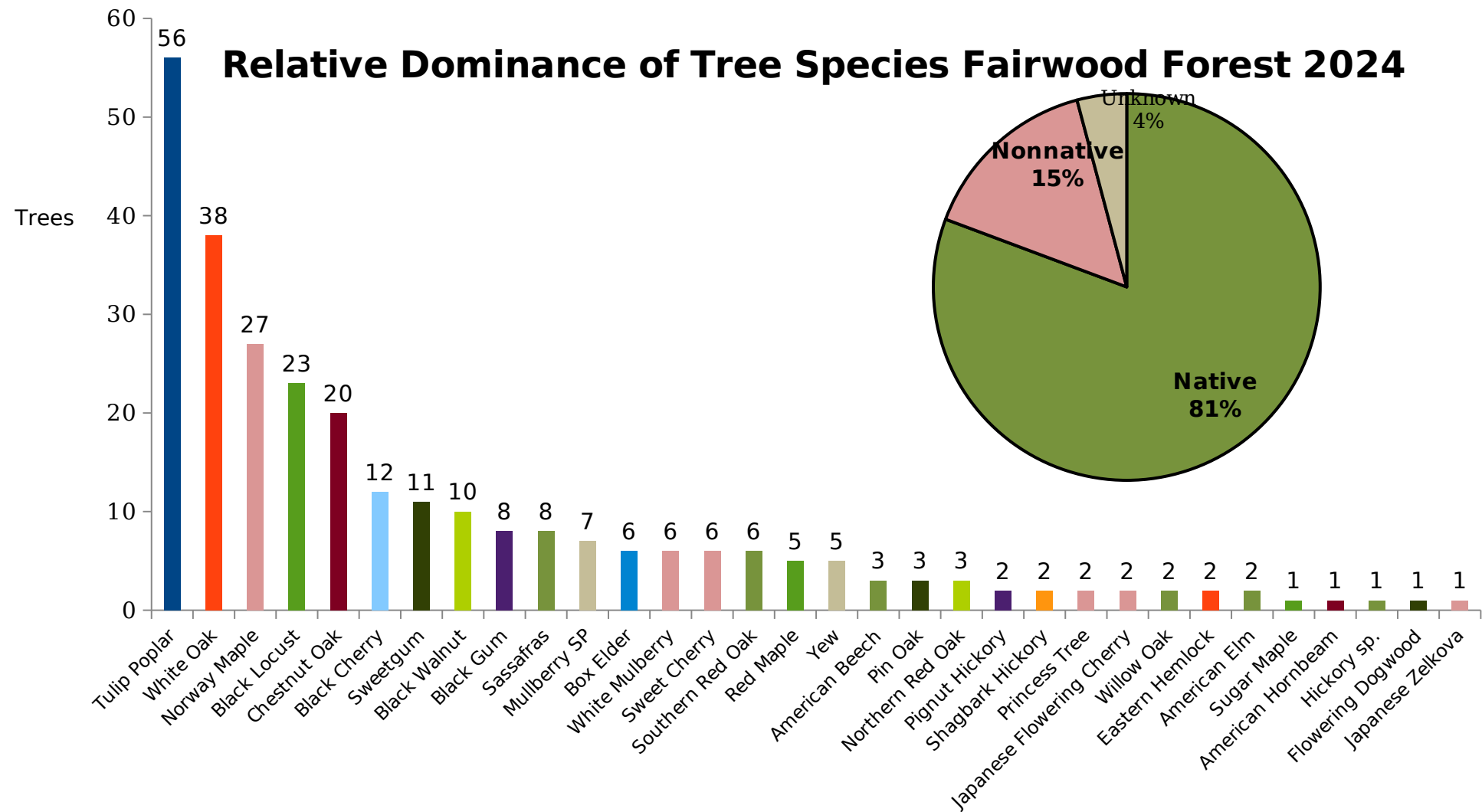
15% Non-native

4% Unknown

### Canopy invasion

Canopy invasion by vines is limited in most of the forest. However, several trees on the north end are highly invaded.

## Relative Dominance of Tree Species Fairwood Forest 2024

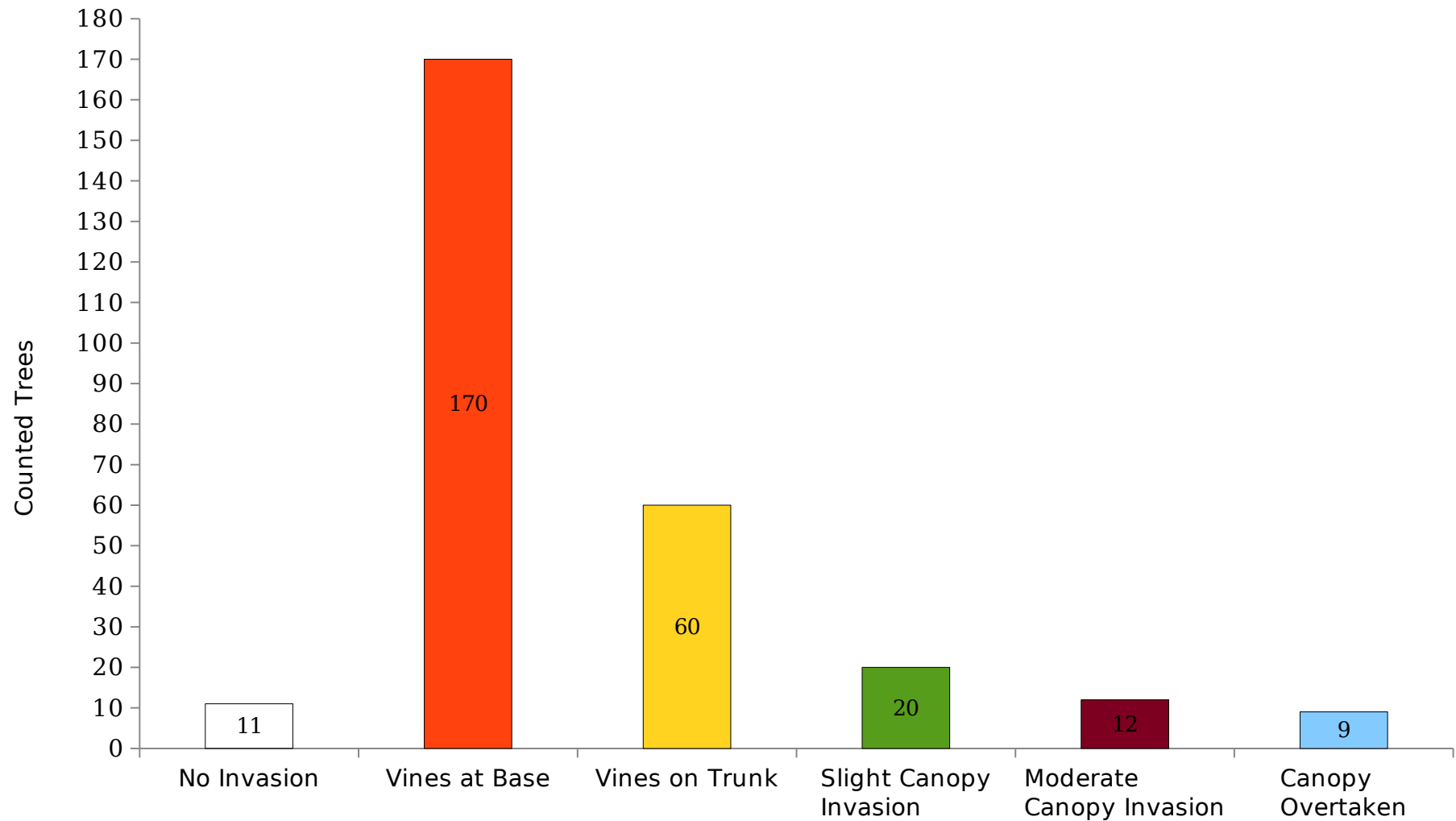


## Canopy Invasion



This map shows the distribution of tree canopy invasion by vines in Fairwood Forest in 2024.

## Canopy Invasion at Fairwood Forest in 2024





## Groundcover

Dominated by: English Ivy (*Hedera helix*)

53% Vegetation  
2% Bare ground  
45% Leaf litter

### Vegetation:

49 Species Identified  
21% Native  
75% Non-native  
4% Unknown

Ground-level invasion is high and cause for concern, but native groundcover diversity is higher than non-native groundcover diversity, indicating the potential for a healthy forest floor in the future.



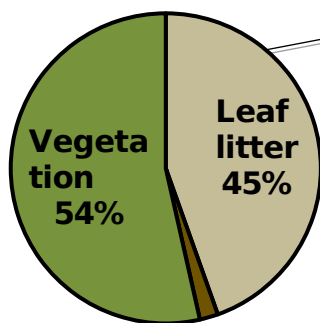
This image is representative of ground cover at Fairwood Forest. There are mostly invasive non-native species including English ivy, Japanese honeysuckle, and Winterberry.



This image is representative of a mix of native and nonnative species. Non-native species like are more pervasive and native species are more diverse. Native species include Violet, Black cherry, Garlic mustard, White snakeroot, and Poison ivy.

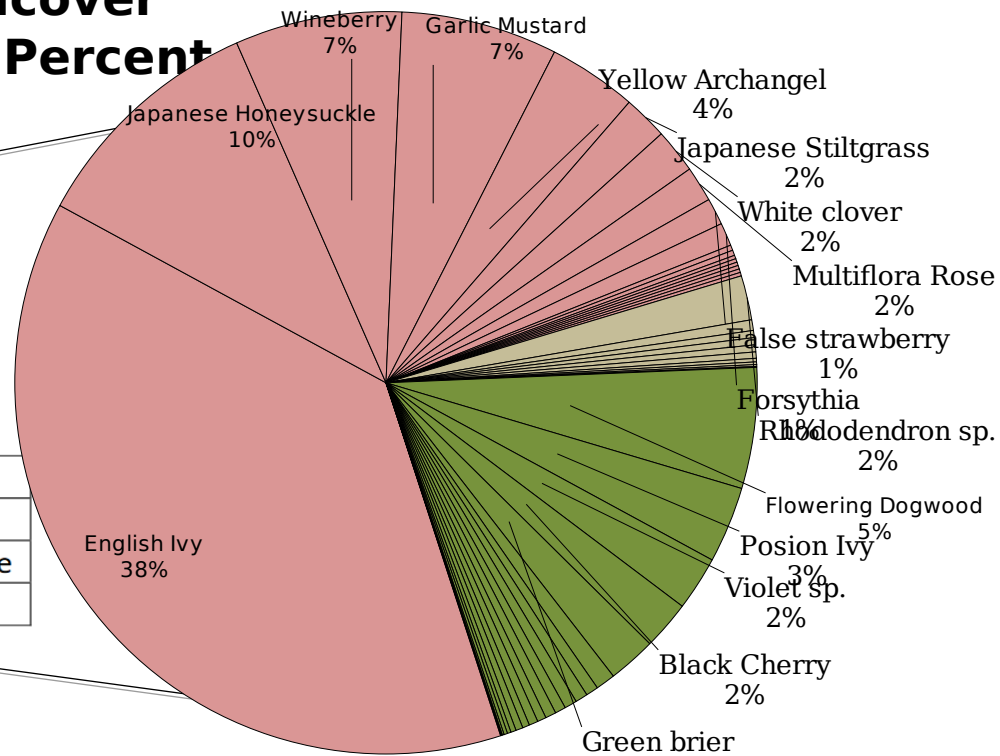
## Groundcover Species (Percent)

### Groundcov



Bare ground  
2%

Color Code	
<span style="color: green;">■</span>	Native
<span style="color: red;">■</span>	Non-Native
<span style="color: brown;">■</span>	Unknown



### Average Percent Groundcover

The smaller pie chart shows average percent of vegetation, and bare ground. The larger pie chart shows the relative proportion of ground cover plant species across the whole forest patch.

**Relative cover** was calculated by dividing the cover of each species by the total vegetation cover of all species, which represents the cover of a particular species as a percentage of total plant cover.

### These plants were present at a relative ground cover of

Native		Non-Native	Unknown
Sassafras	Pokeweed	Burning Bush	Unknown Grass
American hornbeam	Violet (Common blue)	Chinese Wisteria	Aster sp.
Arrowwood	Virginia Creeper	Clematis	Yew
Viburnum	White Oak	Dandelion sp.	
Bellwort sp.	White snakeroot	Japanese Maple	
Bitternut hickory	Willow Oak	Kudzu sp.	
Bluestem	Woodsorrel	Plantain (common)	
Goldenrod		Porcelain Berry	
Canadian Black Snakeroot		Stickyweed	
Grape sp.		Sweet Cherry	
Longstyle sweetroot			



## Species List

### Tree Species

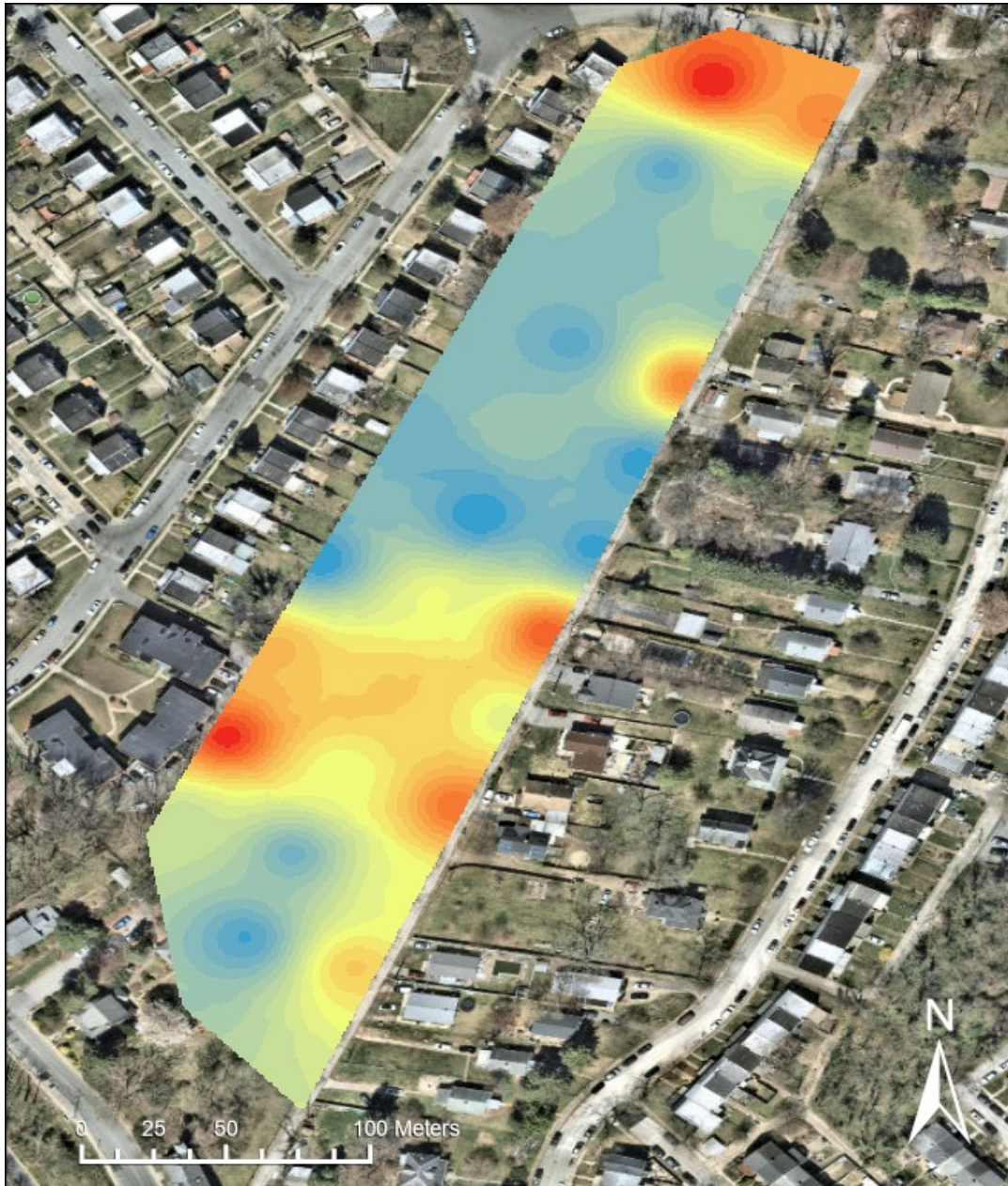
Native	Non-Native	Unknown
<ul style="list-style-type: none"> <li>American beech</li> <li>American elm</li> <li>American hornbeam</li> <li>Black cherry</li> <li>Black gum</li> <li>Black locust</li> <li>Black walnut</li> <li>Box elder</li> <li>Chestnut oak</li> <li>Eastern hemlock</li> <li>Flowering dogwood</li> <li>Hickory sp.</li> <li>Northern red oak</li> </ul>	<ul style="list-style-type: none"> <li>Pignut hickory</li> <li>Pin oak</li> <li>Red maple</li> <li>Sassafras</li> <li>Shagbark hickory</li> <li>Southern red oak</li> <li>Sugar maple</li> <li>Sweetgum</li> <li>Tulip poplar</li> <li>White oak</li> <li>Willow oak</li> </ul>	<ul style="list-style-type: none"> <li>Japanese flowering cherry</li> <li>Japanese zelkova</li> <li>Norway maple</li> <li>Princess tree</li> <li>cherry</li> <li>White mulberry</li> </ul>
		<ul style="list-style-type: none"> <li>Mulberry sp.</li> <li>Yew</li> </ul>

### Groundcover Species

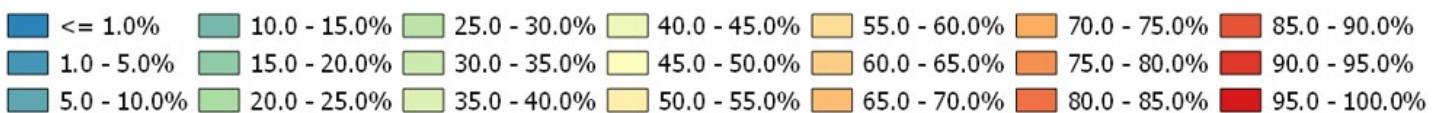
Native	Non-Native	Unknown
<ul style="list-style-type: none"> <li>American hornbeam</li> <li>Poison ivy</li> <li>Arrowwood viburnum</li> <li>Bellwort sp.</li> <li>Bitternut hickory</li> <li>Black Cherry</li> <li>Bluestem goldenrod</li> <li>Canadian black snakeroot</li> <li>Flowering dogwood</li> <li>Grape sp.</li> <li>Greenbrier</li> <li>Longstyle sweetroot</li> <li>Pokeweed</li> <li>Red maple</li> <li>Rhododendron sp.</li> <li>Sassafras</li> <li>Violet (common blue)</li> <li>Violet sp.</li> <li>Virginia creeper</li> <li>White oak</li> <li>White snakeroot</li> <li>Willow oak</li> <li>Woodsorrel</li> </ul>	<ul style="list-style-type: none"> <li>Burning bush</li> <li>English ivy</li> <li>Chinese wisteria</li> <li>Clematis</li> <li>Dandelion sp.</li> <li>False strawberry</li> <li>Forsythia</li> <li>Garlic mustard</li> <li>Japanese honeysuckle</li> <li>Japanese maple</li> <li>Japanese stiltgrass</li> <li>Kudzu sp.</li> <li>Multiflora rose</li> <li>Plantain (common)</li> <li>Porcelain berry</li> <li>Stickyweed</li> <li>Sweet cherry</li> <li>White clover</li> <li>Wineberry</li> <li>Yellow archangel</li> </ul>	<ul style="list-style-type: none"> <li>Aster sp.</li> <li>Rhododendron sp.</li> <li>Unknown grass</li> <li>Yew</li> </ul>



# Ground Cover Invasion

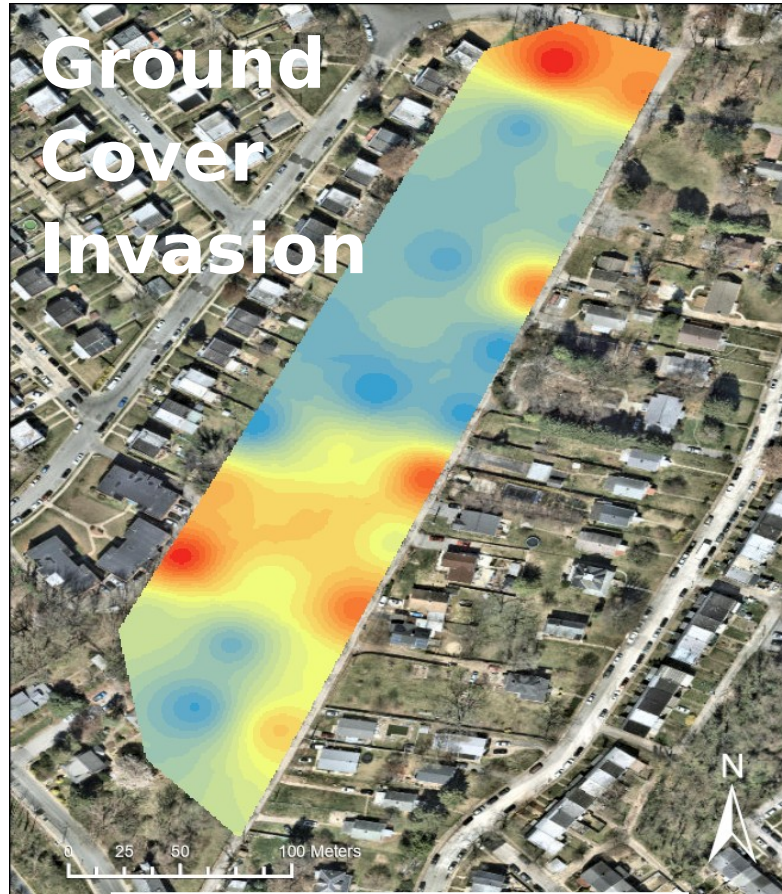


## Percent Non-Native

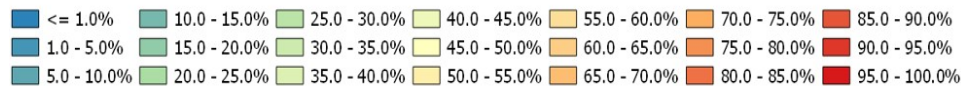


This map shows the distribution of non-native groundcover found in Fairwood Forest in 2024.





**Percent Non-Native**



**Average Schumacher Invasion**



These images show the percent non-native ground cover (left) and canopy invasion by vines (right). Overall, the canopy is healthy with a few hotspots of invasion, with continued management these scores can be brought down or maintained. The level of ground cover invasion particularly in the north and central parts of the forest could spread to the canopy if not carefully addressed.



# Soil

## Defining Terms

**Organic Matter** - The fraction of the soil that consists of plant or animal tissue in various stages of breakdown (decomposition).

**Soil Texture** - The relative content of various-sized particles, such as sand, silt, and clay in the soil.

**Bulk Density** - The dry weight of soil per unit volume of soil. Bulk density is commonly used as a proxy for determining the amount of soil compaction.

## Soil horizon profile at Fairwood Forest

In the image below, sticks were placed where distinct color changes were observed.

**Dark color** in the upper horizons (top) indicates higher organic matter content.

**Reddish yellow color** in the lower horizons indicates well-drained soils with iron oxidation.

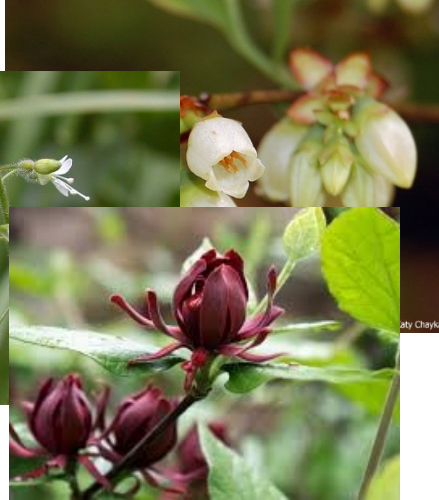
The soil texture at this site is predominantly **clay loam**





## Interesting species found in Fairwood Forest in Summer 2024

1. **Hillside blueberry** (*Vaccinium pallidum*) - A native low-lying shrub, the hillside blueberry is one of Maryland's native blueberry species that produces small, edible berries during summer. This is an important food source for lots of wildlife, and hosts over 276 species of caterpillars, as well as supporting 6 specialist bees. Hillside and other related species are a common sight in healthy forests with effective deer management elsewhere in Maryland, but they are not always as easy to find in the city.
2. **Eastern enchanter's nightshade** (*Circaea canadensis*) - Broad-leaved enchanter's nightshade is native to eastern North America. It is found in all New England states in shady, moist forest environments with nitrogen-rich clay. It has tiny, white flowers and toothed leaves, growing oppositely on hairy stems. Despite the name, it is not especially toxic but does contain astringent tannins.
3. **Solomon's seal** (*Polygonatum sp.*) - A native understory perennial that is commonly used in gardens.
4. **Carolina allspice** (*Calycanthus floridus*) - Carolina allspice, also known as Eastern sweetshrub, Big sweet betsy, or Sweet bubbly, is a popular plant for cultivation due to its fragrant, dark red flowers and aromatic leaves, as well as its tolerance of a wide variety of soils. It is highly resistant to disease and attracts pollinators. The bark is reportedly used to make medicinal teas and as a substitute for cinnamon. This native shrub is uncommon in the area and needs two different individuals to produce fruit, so finding a fruiting bush is uncommon.
5. **White rattlesnake root** (*Nabalus albus*) - White rattlesnake-root is native to deciduous forests and woodlands in New England. It is distinguished from other members of its genus by closely observing the flower heads, with colors ranging from white to purple-pink. The Iroquois applied a poultice of the roots of white rattlesnake root to rattlesnake bites.
6. **Bellwort sp.** (*Uvularia sp.*) - found across the forest patch - a native perennial in the lily family (*Liliaceae*).



(1) *Fuchsia* growing on the side of a hill

(2) *Fuchsia* growing on the side of a hill

(4) *Fuchsia* growing on the side of a hill



(5) Rattlesnake root at Fairwood Forest



(5) Flowers of Rattlesnake root



(6) Foliage of bellwort



(6) Flower of bellwort